SERVICE MANUAL

marantz

model 6150

Turntable

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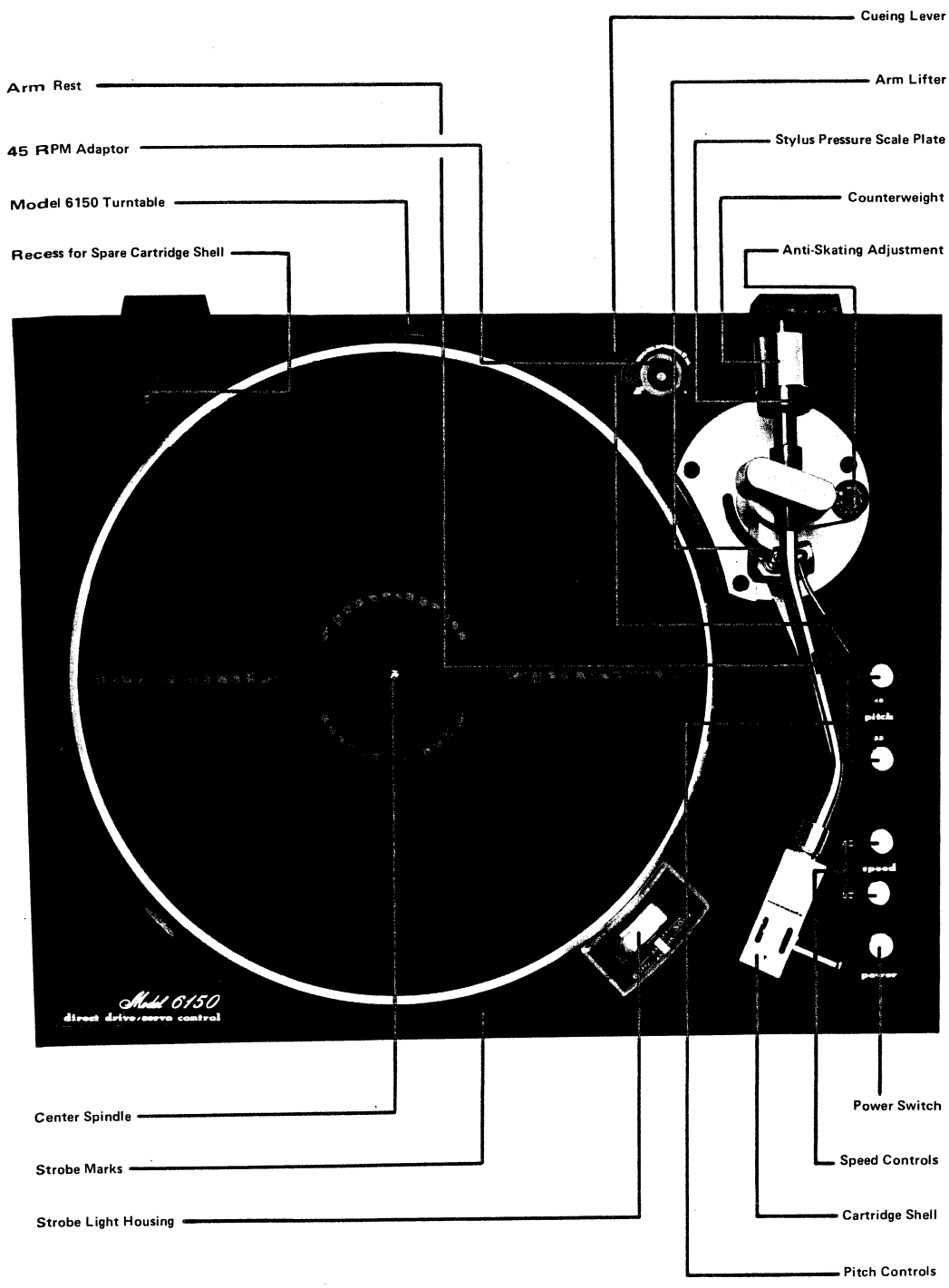
MARANTZ MODEL 6150 TURNTABLE



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1. PERFORMANCE SPECIFICATIONS

GENERAL

Speeds:	33-1/3, 45 rpm
Speed Control (PITCH) range:	6% (±3%)
Drive System:	Direct Drive
Drive Motor:	DC Servo-Controlled
Platter Diameter:	12-1/8 in. (31.0 cm)
Rumble (DIN):	−60 dB
Wow and Flutter:	0.04% (WRMS)
Power Requirements:	120 V AC, 60 Hz (USA and Canada Model) 110/120/220/240 V AC 50/60 Hz (European Model)
Power Consumption:	5 Watts
Dimensions:	17-3/4 in. Wide x 5-1/8 in. High x 14-1/8 in. Deep. (450 mm x 130 mm x 360 mm)
Weight:	15.6 lbs (7.1 kg) Unpacked 20 lbs. (9.1 kg) Packed for Shipment

TONE ARM

Type:	Static-Balanced S Shaped Pipe Arm
Length:	8-7/16 in. (215 mm)
Overhang:	14 mm
Tracking Force Adjustment Range:	0—3.0 g
Anti-Skating Force Compensation Range:	0—4.0 g

2. ADJUSTMENTS

2-1. TONE ARM ADJUSTMENTS

After a cartridge is mounted, several adjustments must be made to optimize turntable performance. First, the stylus overhang must be adjusted; then the tone arm balance, tracking force, and anti-skating force.

2-1-1. STYLUS OVERHANG

The Model 6150 Turntable is designed to operate with the least distortion when the tip of the stylus is at a particular distance from the tone arm pivot. For this reason, the cartridge shell is slotted, allowing the cartridge with its mounting screws to be slid toward or away from the pivot point. This, in effect, changes the radius of the arc described by the stylus. Supplied in the accessory kit is a 45 RPM spindle adaptor. The adaptor has been specially marked with an arrow and a cross to aid you in setting the proper stylus overhang. Proceed as follows:

A. With the turntable stopped, place the 45 RPM adaptor on the center spindle with the arrow pointing to the rear of the turntable.
B. Remove the arm from its arm rest and remove the protective cover (if any) from the stylus.
C. Place the stylus tip over the 45 RPM adaptor and adjust the cartridge so that the stylus tip will be perfectly centered in the cross.
D. Make sure that the cartridge is installed straight. The sides of the cartridge must remain parallel to the sides of the shell.
E. Snug up the mounting screws.

2-1-2. VERTICAL TONE ARM BALANCE

The adjustable counterweight at the end of the tone arm establishes tone arm balance and stylus tracking force. Since no two types of cartridges weigh the same, the balance and tracking force must be adjusted for each cartridge being used.

First, to establish a point of reference, the entire arm assembly (with cartridge installed) must be balanced. If the cartridge has a removable stylus protector, remove it, (as you would to play a record). Release the tone arm from the arm rest.

To adjust the tone arm balance, set the anti-skate dial at 0.

To balance the arm, adjust the position of the counterweight by rotating it. A numbered stylus pressure scale plate is located immediately in front of the counterweight. Rotating the scale plate alone does not change the counterweight's position. To change the balance, grasp and turn the counterweight itself.

Adjust the weight so that the arm is level (parallel to the turntable surface) with the cartridge suspended in mid air.

Then, without moving the counterweight, set the stylus pressure scale plate to indicate zero. This establishes a reference point for setting the tracking force.

2-1-3. TRACKING FORCE

For the recommended tracking force, refer to the instructions that accompany the cartridge.

Figure 1. Stylus Overhang Adjustment

Figure 2. Tone Arm Balance Adjustment

Tracking force, the downward pressure of the stylus against the record, is produced by simply setting the arm off balance in the appropriate direction. That is, the counterweight is screwed inward (toward the arm pivot) until the desired downward pressure is achieved.

The stylus pressure scale plate is in frictional contact with the counterweight, so that they rotate together when the counterweight is turned. The numbers on the scale plate correspond to the tracking force measured in grams. So, if the desired tracking force is two grams, turn the counterweight inward until the stylus pressure scale plate registers 2.

2-1-4. ANTI-SKATING ADJUSTMENT

The anti-skating mechanism is provided to counteract the natural tendency for the arm to "skate" toward the center of the record as it is being played. The more tracking force used, the more anti-skating force required.

The anti-skating force is adjustable with continuously graduations that correspond with the tracking force markings on the stylus pressure scale plate. Set the anti-skating force to the same value as the tracking force.

Place the arm in the arm rest, and secure it with the safety lock.

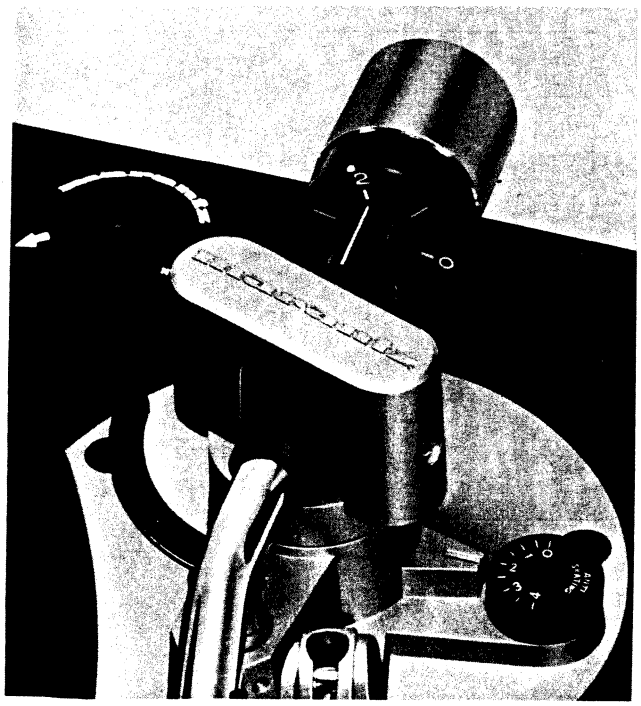


Figure 3. Anti-Skating Mechanism

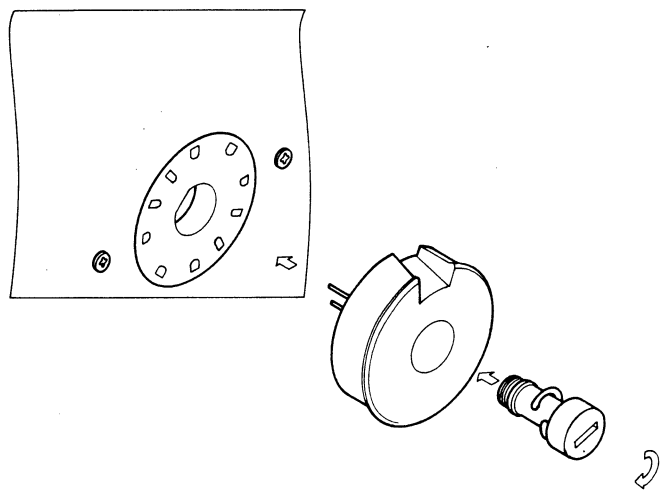
3. SERVICE NOTES

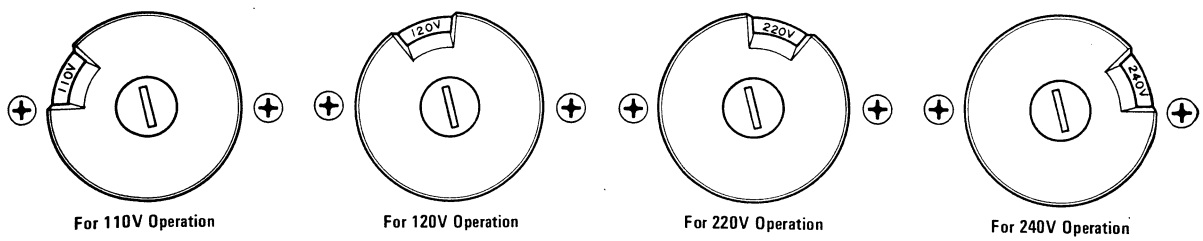
3-1. VOLTAGE CONVERSION FOR EUROPEAN MODEL

The European version of the Model 6150 is equipped with a universal power transformer that may be adjusted to operate at 110 V, 120 V, 220 V, or 240 V AC at 50 to 60 Hz.

To convert the unit to a different power source voltage, reposition conversion plug as shown in the illustration below.

CAUTION: DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE.





For 110V Operation | For 120V Operation | For 220V Operation | For 240V Operation

3-2. CARTRIDGE WIRE COLOR CODE

Before a cartridge is screwed into the shell, the small clips at the ends of the wires in the tone arm cartridge shell should be pushed onto their corresponding cartridge connection pins.

TONE ARM CARTRIDGES SHELL — WIRE COLOR CODE —	
RIGHT CHANNEL HOT	RED
RIGHT CHANNEL GROUND	GREEN
LEFT CHANNEL HOT	WHITE
LEFT CHANNEL GROUND	BLUE

The cartridge or its accompanying technical sheet will identity the cartridge connection pins. It may be necessary to slightly compress the terminals clips with your fingers to make them fit snugly on the prongs of some cartridges.

3-3. REPLACEMENT PARTS/TECHNICAL ASSISTANCE

3-3-1. REPLACEMENT PARTS

Turntable replacement parts may be ordered by writing to;

MARANTZ COMPANY, INC.
PARTS DEPARTMENT
P.O. BOX 577
CHATSWORTH, CALIFORNIA 91311 USA

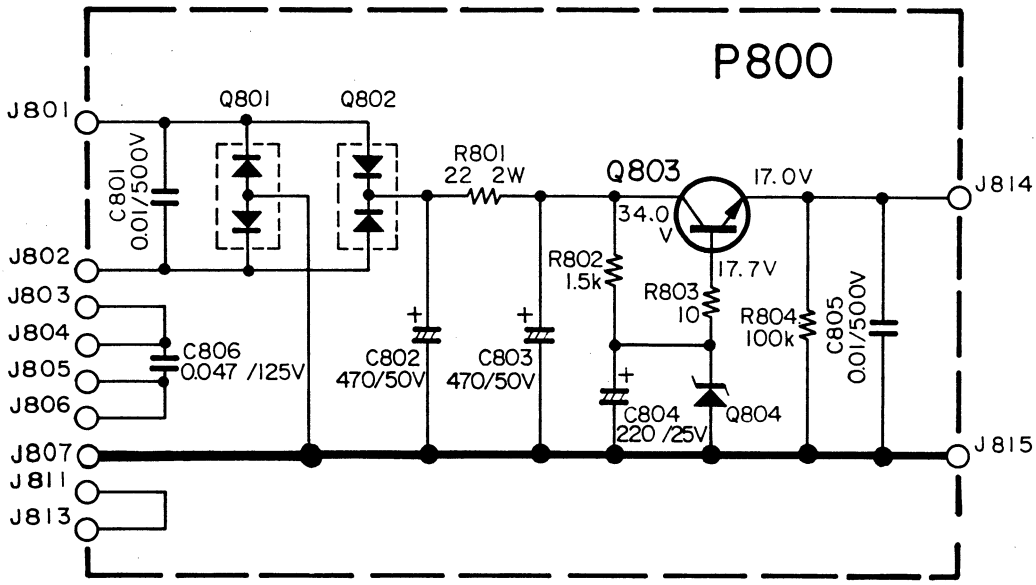
3-3-2. TECHNICAL ASSISTANCE

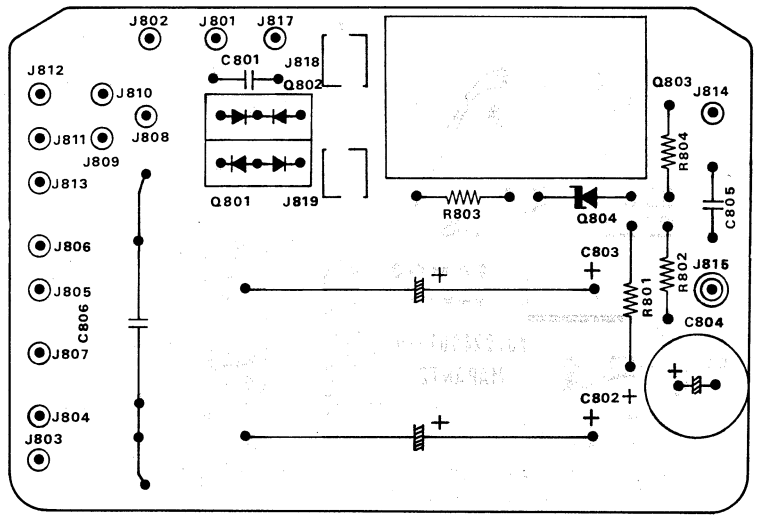
Inquires regarding the operation and servicing of Marantz equipment should be directed to;

MARANTZ COMPANY, INC.
TECHNICAL SERVICES DEPARTMENT
P.O. BOX 577
CHATSWORTH, CALIFORNIA 91311 USA

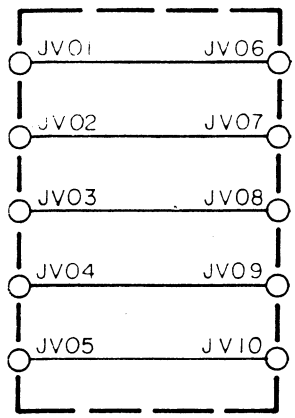
4. DIAGRAMS

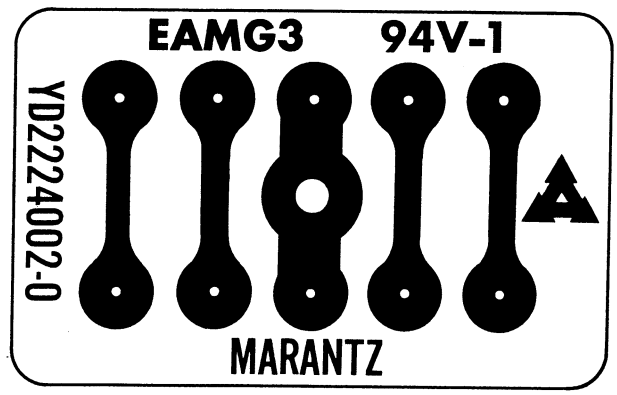
4-1. POWER SUPPLY BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - P800



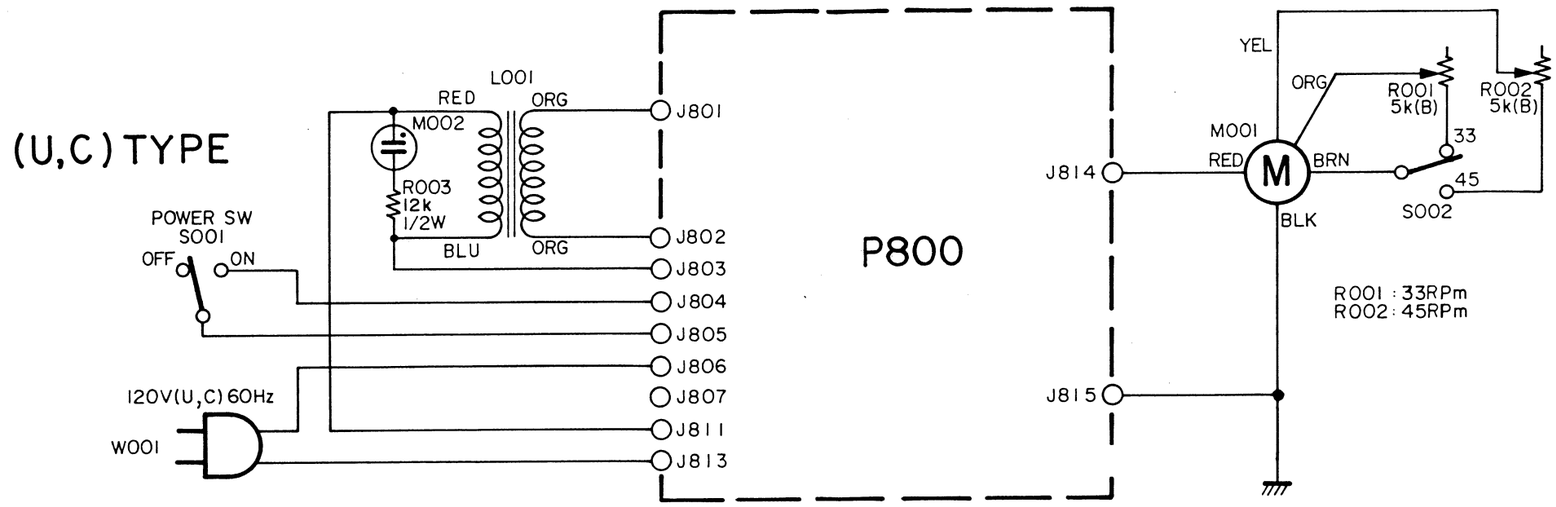


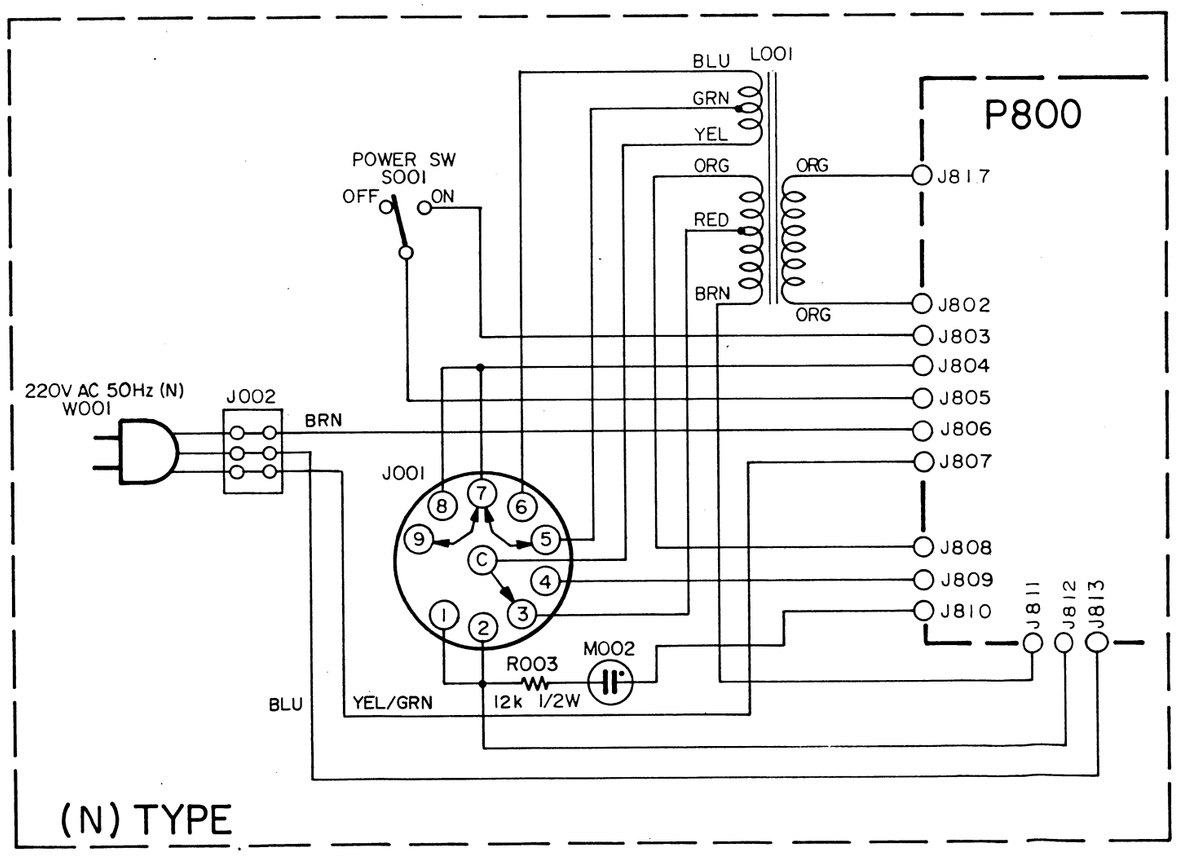
4-2. CONNECTOR BOARD SCHEMATIC DIAGRAM AND COMPONENT LOCATIONS - PV00

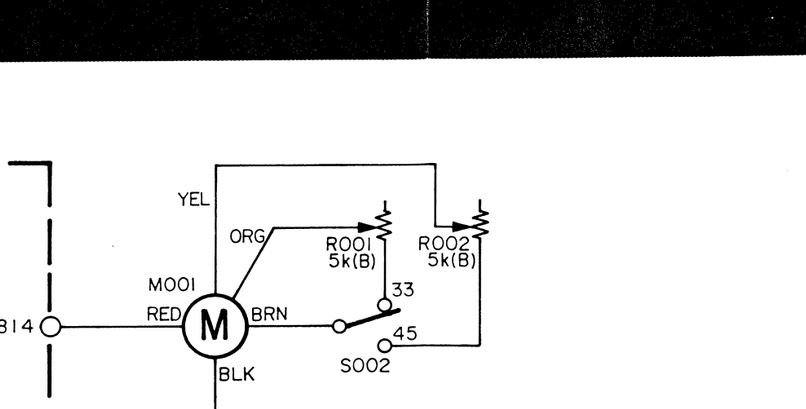




4-3. CONNECTION DIAGRAM







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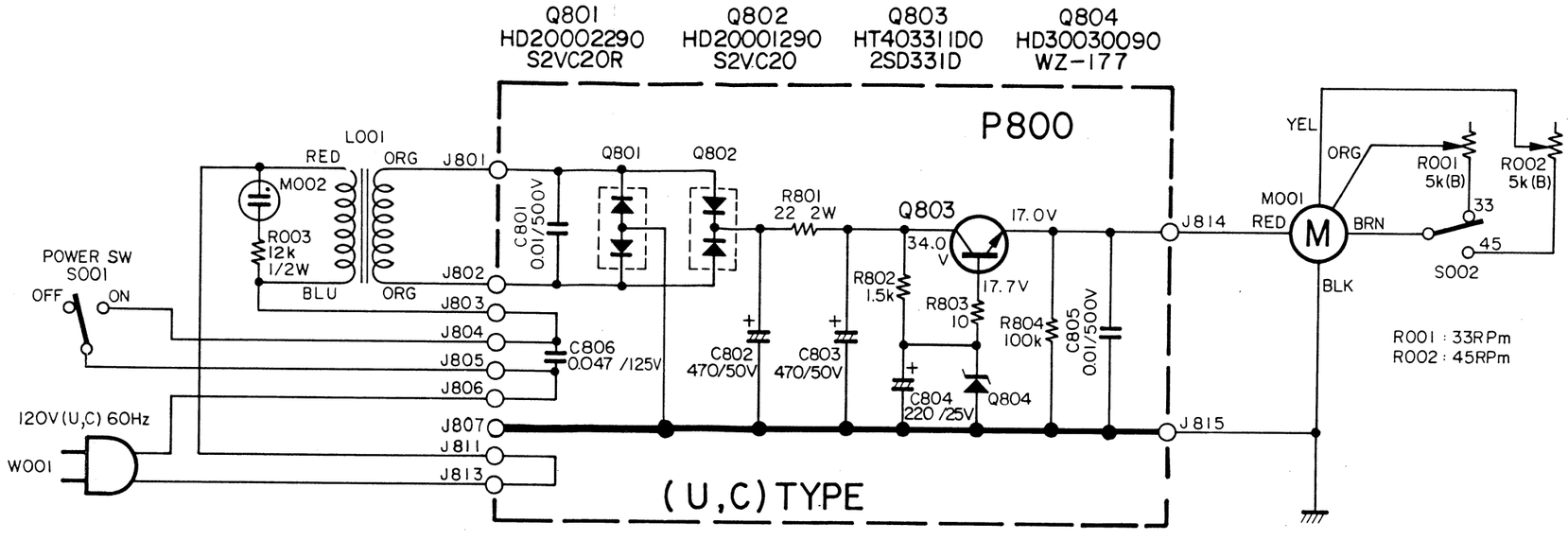
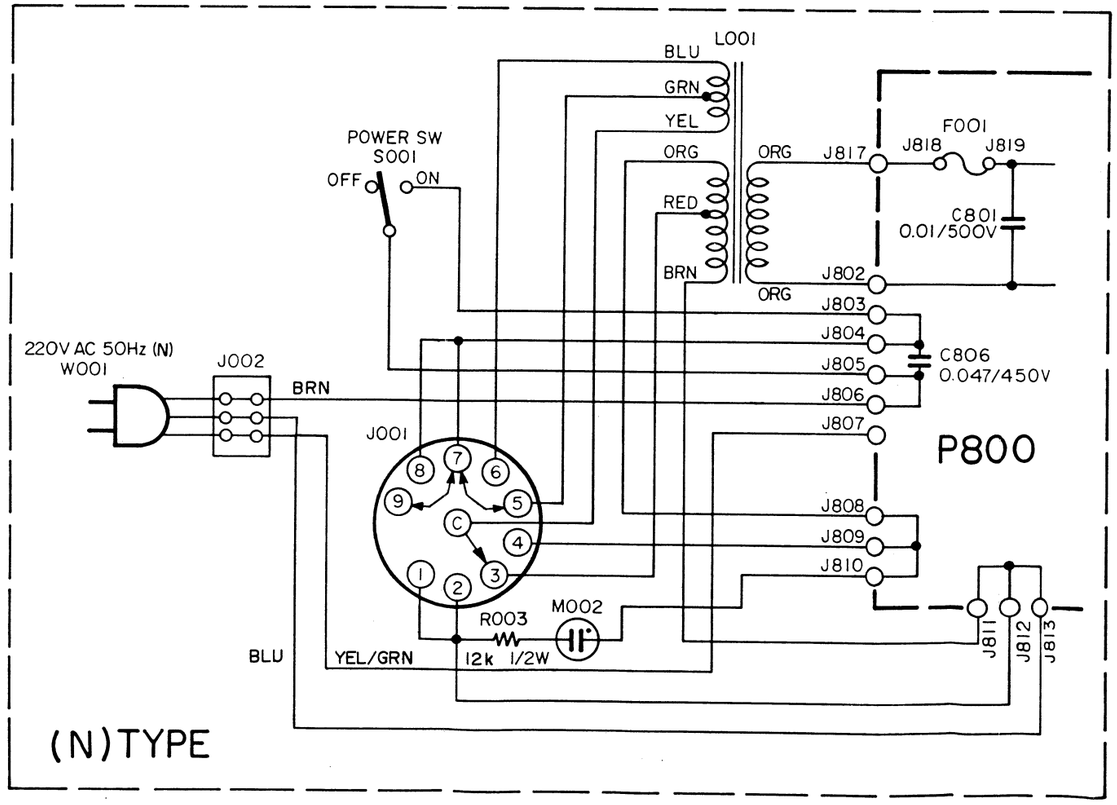
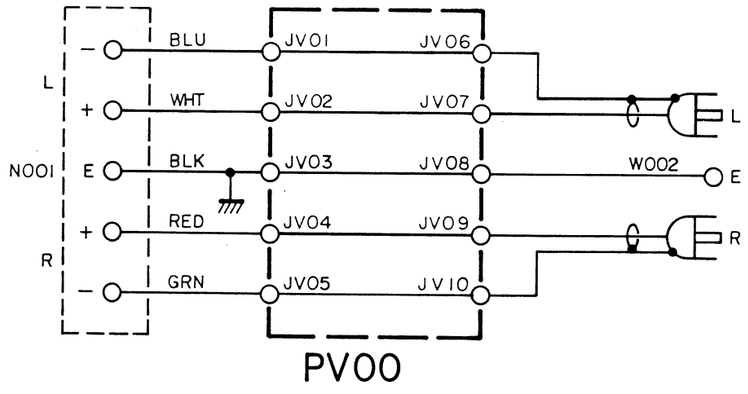
4-4. SCHEMATIC DIAGRAM

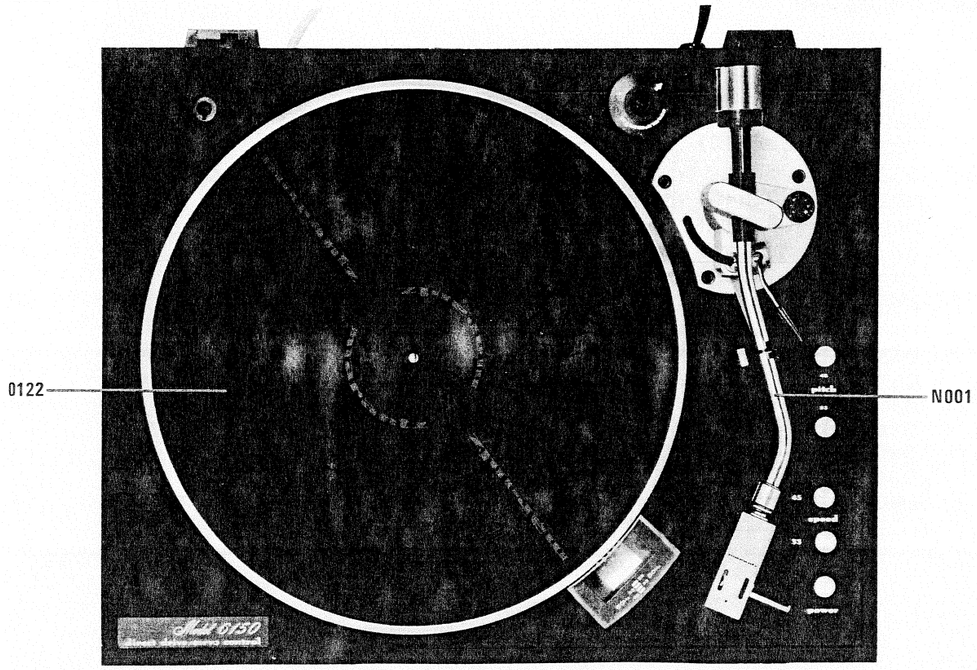




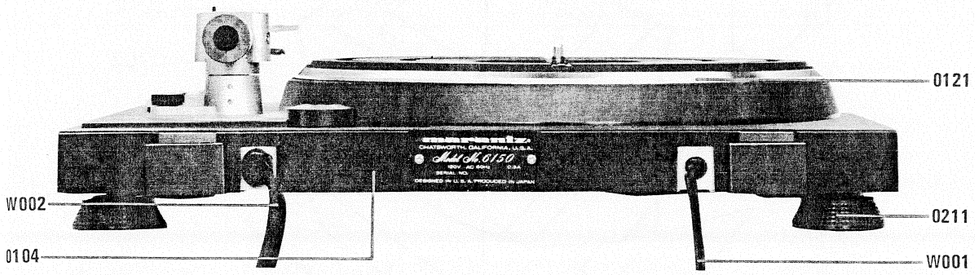


5. MAJOR COMPONENT LOCATIONS

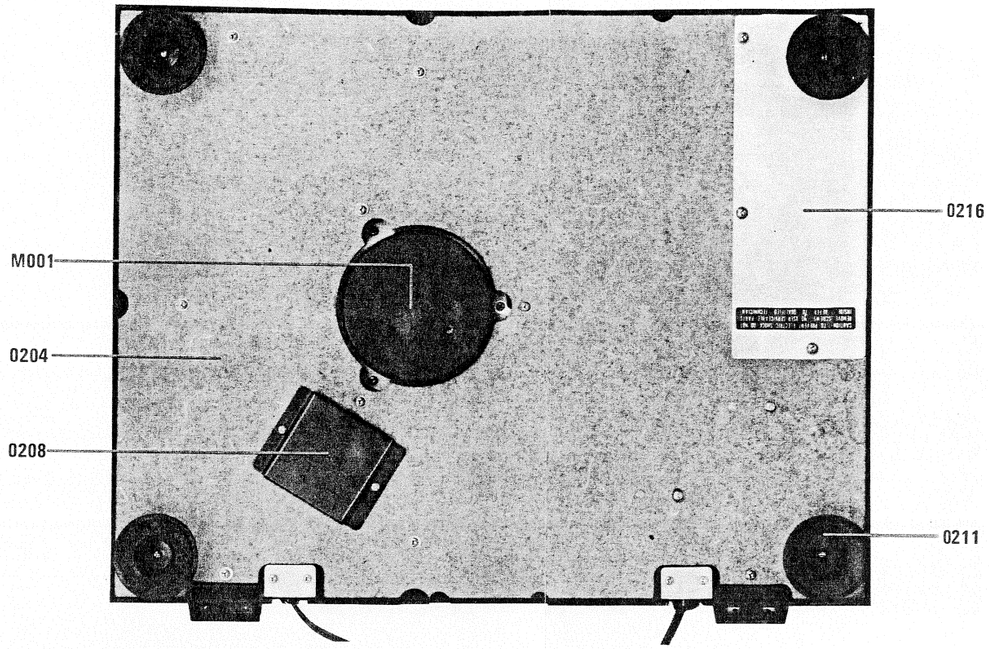
5-1. CABINET - TOP VIEW



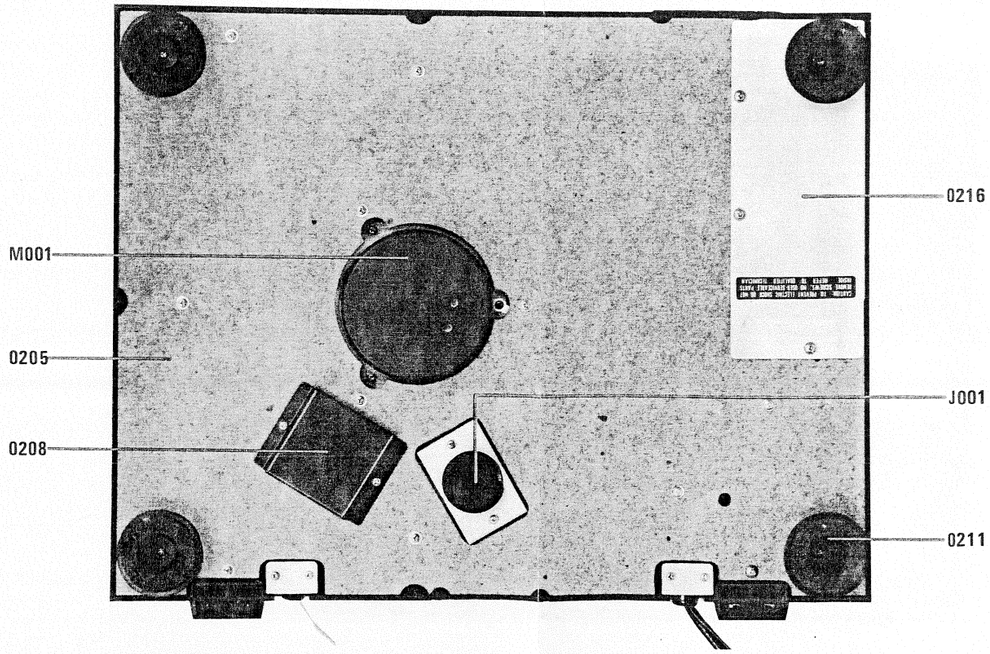
5-2. CABINET - REAR VIEW



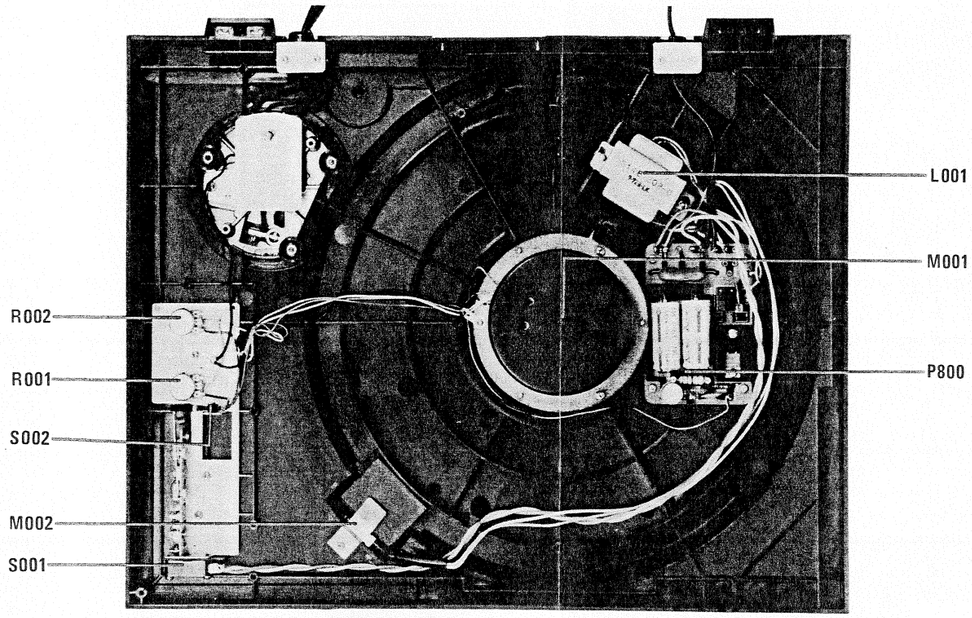
5-3. CABINET - BOTTOM VIEW - U.S.A. & CANADA



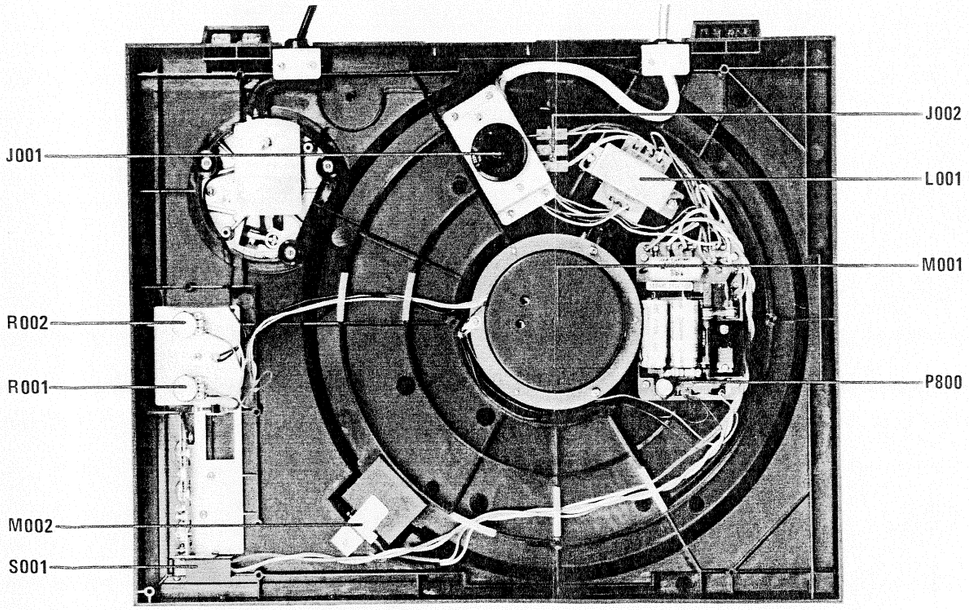
5-4. CABINET - BOTTOM VIEW - EUROPE



5-5. CHASSIS - BOTTOM VIEW - U.S.A. & CANADA



5-6. CHASSIS - BOTTOM VIEW - EUROPE



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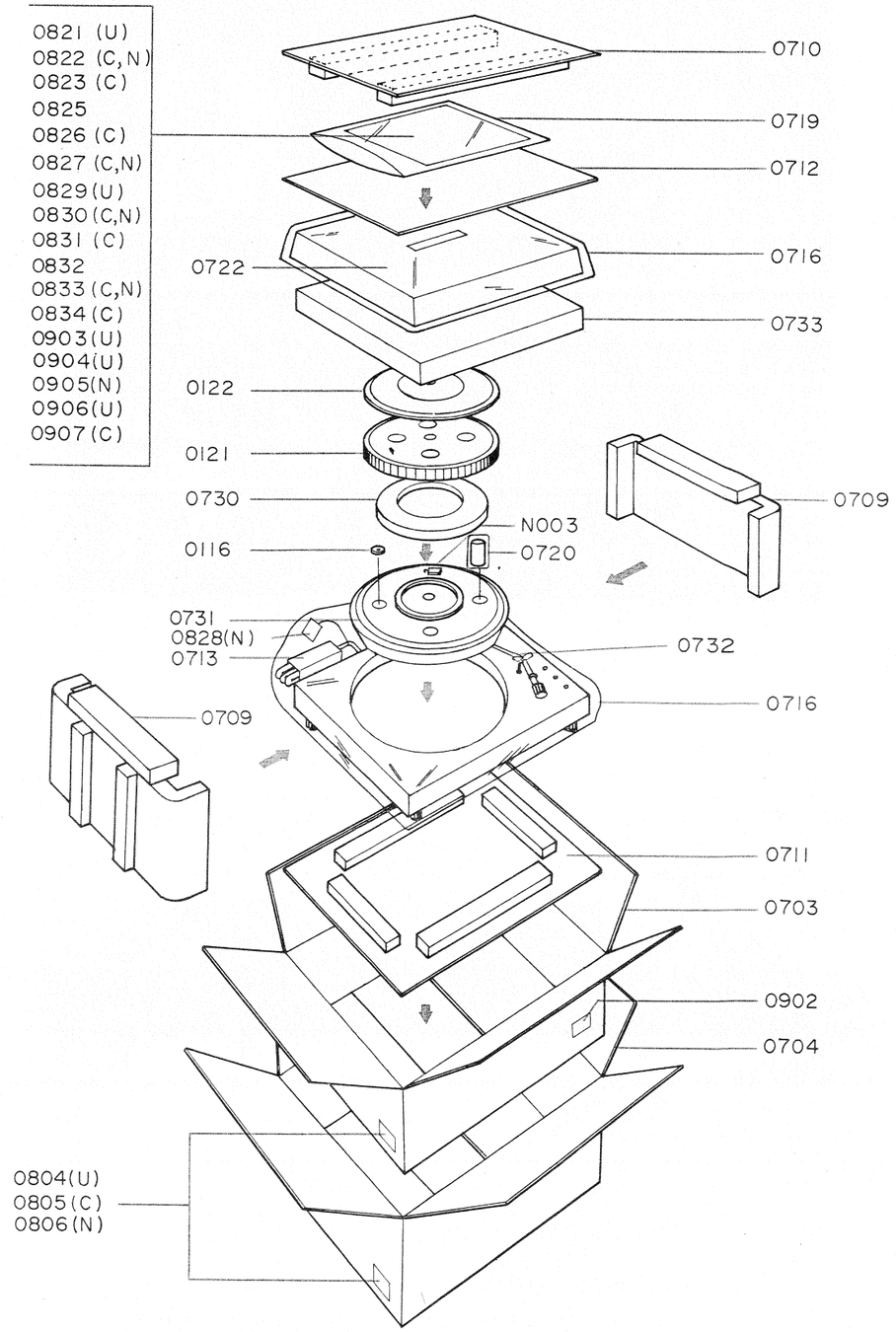
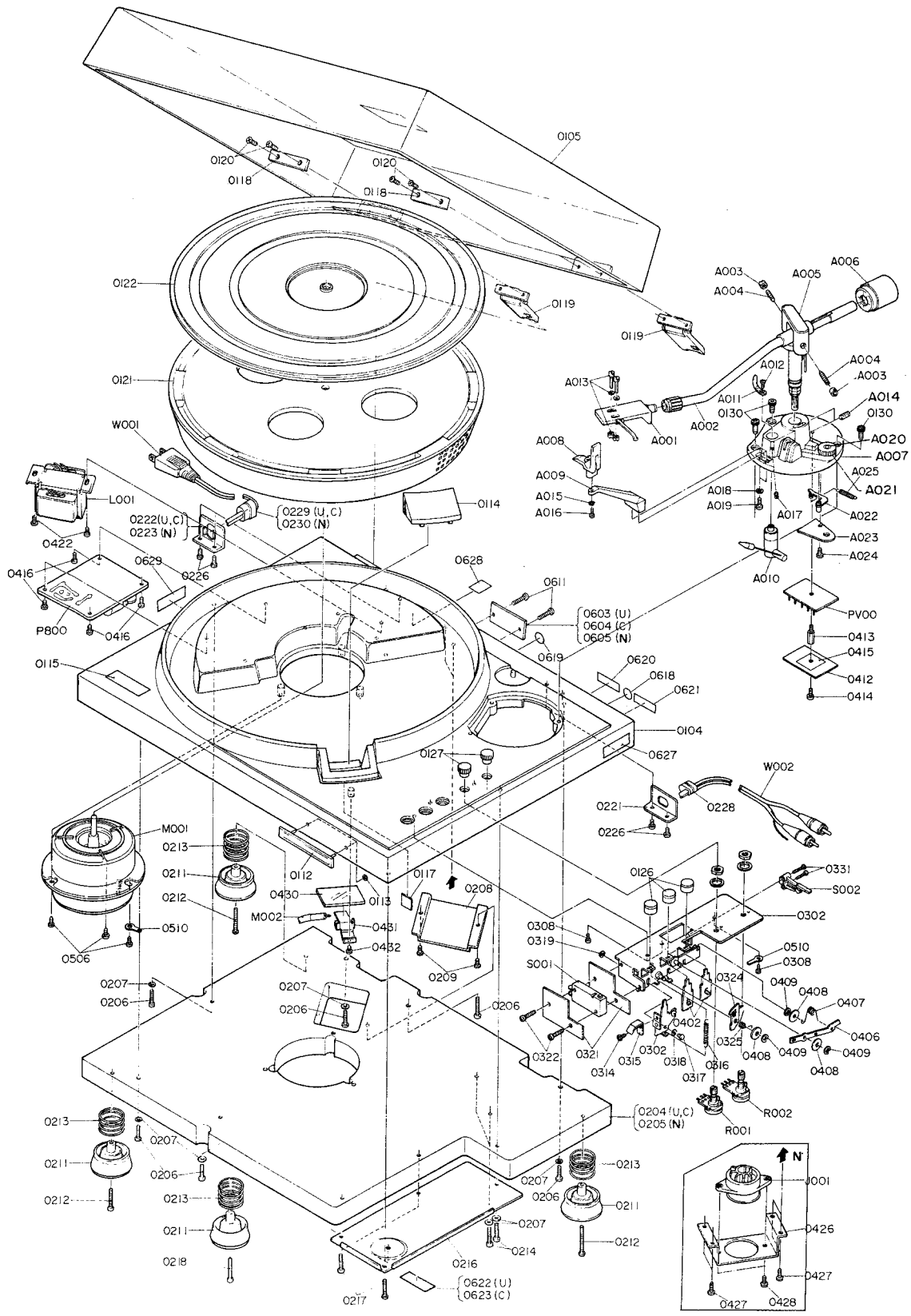
6. EXPLODED VIEWS

6-1. PACKING MATERIAL EXPLODED VIEW



U: For U.S.A.
C: For Canada
N: For Europe

6-2. MECHANICAL EXPLODED VIEW



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U : For U.S.A.
C : For Canada
N : For Europe

7. PARTS LIST

REF. DESIG.	Q'TY U	C	N	PART NO.	DESCRIPTION
A	1	1	1	2224064400	Case Assembly
0104	1	1	1	2224064013	Case
0112	1	1	1	2988251012	Badge
0113	2	2	2	6402030000	RG Ring
0114	1	1	1	2224158012	Window
0115	1	1	1	2224203010	Name Plate
0430	1	1	1	2224274014	Reflector
0431	1	1	1	2224104010	Retainer
0432	1	1	1	51300308B0	P.H. Tapped Screw, P3x8ST
B	1	1	1	2224053400	Dust Cover Assembly
0105	1	1	1	2224053510	Cover K
0119	2	2	2	2224153510	Hinge K
0120	4	4	4	51040410B9	F.H.M. Screw, F4x10
0116	1	1	1	2949104010	Retainer, Spindle 45RPM
0118	2	2	2	2224160250	Bracket
0121	1	1	1	2224165012	Turntable
0122	1	1	1	2224107020	Sheet
0126	3	3	3	2224154012	Knob, Power
0127	2	2	2	2224154030	Knob, Pitch
0130	3	3	3	51730412S9	Socket Screw VL
0131	3	3	3	53110403A9	Hexagon Nut
0132	3	3	3	54020401A0	Flat Washer P
0204	1	1		2224004013	Table
0205			1	2224004022	Table
0206	9	9	9	51300325B0	P.H. Tapped Screw B, 3x25
0207	9	9	9	54020301A0	Flat Washer P
0208	1	1	1	2224053020	Cover
0209	2	2	2	51523113A0	R.H. Wood Screw
0211	4	4	4	2224057010	Leg
0212	3	3	3	51523113A0	R.H. Wood Screw
0213	4	4	4	2224115030	Spring
0214	2	2	2	51450324A0	F. Washer Screw
0216	1	1	1	2224257012	Lid
0217	3	3	3	51300325B0	P.H. Tapped Screw B, 3x25
0218	1	1	1	51300308B0	P.H. Tapped Screw B, 3x8
0221	1	1	1	2224160020	Bracket
0222	1	1		2224160030	Bracket
0223			1	2224160040	Bracket
0226	4	4	4	51300308B0	P.H Tapped Screw B, 3x8
0228	1	1	1	1455259080	Bushing, Output Cord
0229	1	1		1455259030	Bushing, AC Cord
0230			1	1455259040	Bushing, AC Cord
0302	1	1	1	2224105510	Chassis K
0308	3	3	3	51300308B0	P.H. Tapped Screw B, 3x8
0311	1	1	1	2224354512	Lever K
0315	1	1	1	2224005022	Clamper
0316	1	1	1	2224115010	Spring
0317	1	1	1	2939112042	Shaft
0318	2	2	2	59035402G9	Washer
0319	1	1	1	64000200R0	RG Ring G
0321	1	1	1	2939120050	Insulator
0322	2	2	2	51570314B0	P.H. Tapped Screw, P3x14ST
0324	1	1	1	3069102020	Lock
0325	1	1	1	2939115092	Spring
0402	2	2	2	2224354020	Lever
0406	1	1	1	2224354030	Lever
0407	1	1	1	2224115020	Spring

REF. DESIG.	Q'TY U	C	N	PART NO.	DESCRIPTION
0408	1	1	1	5903540299	Washer
0409	1	1	1	64000200R0	RG Ring G
0416	4	4	4	51300308B0	P.H. Tapped Screw B, 3x8
0422	2	2	2	51300306B0	P.H. Tapped Screw B, 3x6
0426			1	2224160050	Bracket
0427			4	51300308B0	P.H. Tapped Screw B, 3x8
0428			2	51060306A9	R.H.M. Screw, R3x6
0503	1	1	1	2871005010	Clamper
0506	3	3	3	51300310B0	P.H. Tapped Screw B, 3x10
0510	2	2	2	62030049W0	T.L. Lug, Earth
0515	1	1	1	2730267020	Heatsink
0516	1	1	1	51100308B9	B.H.M. Screw, B3x8
0517	1	1	1	53110303E9	Nut
0518	1	1	1	54040302N0	Spring Washer
0519	1	1	1	54050300R0	T.L. Washer OR
0526	1	1	1	51100304A9	B.H.M. Screw, B3x4
0603	1			2224265010	Indicator
0604		1		2224265020	Indicator
0605			1	2224265030	Indicator
0611	2	2	2	51300308B0	P.H. Tapped Screw B, 3x8
0616	1	1	1	2908861010	Label, On Motor
0618		1		2457861040	Label, CSA
0619	1			9511101060	Label, UL
0620	1			9510911020	Label, UL Factory
0621		1		9510911010	Label, LL No.
0622	1		1	3889861010	Label, UL Caution
0623		1		2911861180	Label
0626	1	1	1	2939861010	Label, On Power Transformer
0627	1			3444861010	Label, FTC
0628			1	2882861020	Label
0629			1	9512601080	Label, 500mAT 250V
0703	1	1	1	2224801010	Packing Case, Inner
0704	1	1	1	2224801110	Packing Case, Outer
0709	2	2	2	2224803010	Cushion
0710	1	1	1	2224807010	Reinforcing
0711	1	1	1	2224807020	Reinforcing
0712	1	1	1	2224807030	Reinforcing, Turntable
0713	1	1	1	1029804010	Sleeve, AC Cord
0716	2	2	2	9014543380	Polyethylene Bag, Set
0719	1	1	1	9013025010	Polyethylene Bag, Printed Matter
0720	3	3	3	9010510010	Polyethylene Bag, Accessories
0722	1	1	1	2224053110	Cover
0730	1	1	1	2224803050	Cushion, Case
0731	1	1	1	2224803060	Cushion, Turntable
0732	1	1	1	2939007010	Strip
0733	1	1	1	2224803070	Cushion
0804	4			9522815010	Serial No. Card
0805		4		9523015120	Serial No. Card
0806			4	9523015110	Serial No. Card
0821	1			2224851010	Instructions, Set
0822		1	1	2224851310	Instructions, Set
0823		1		2886851100	Instructions, Flysheet
0825	1	1	1	2224856010	Schematic Diagram
0826		1		2818854042	Guarantee Card
0827		1	1	2818851120	Instructions, Important
0828			1	9560000042	Hang Tag
0829	1			2818854023	Guarantee Card
0830		1	1	9630000180	Guarantee Card
0831		1		9650000050	Service Station Card
0832	1	1	1	2224851020	Instructions, Cushion
0833		1	1	2818851140	Instructions, Package Caution
0834		1		2818851040	Instructions, Cushion
0902		2		9510901020	Label
0903	1			2577854012	Guarantee Card

U: For U.S.A.
C: For Canada
N: For Europe

REF. DESIG.	Q'TY U	C	N	PART NO.	DESCRIPTION
0904	1			2577851020	Instructions
0905			1	2818813010	Envelope
0906	1			2577813010	Envelope
0907		1		2918813012	Envelope
					POWER SUPPLY CIRCUIT BOARD - P800
P800	1	1	1	YD22240010	P.W. Board (Print Only)
	1			ZZ22240010	P.W. Board Assembly
		1		ZZ22249010	P.W. Board Assembly
			1	ZZ22248010	P.W. Board Assembly
					P800 - RESISTORS
R801	1	1	1	GJ05220020	Fixed, 22Ω ±5%, 2W
R802	1	1	1	RT05152140	Fixed, 1.5kΩ ±5%, ¼W
R803	1	1	1	RT05100140	Fixed, 10Ω ±5%, ¼W
R804	1	1	1	RT05104140	Fixed, 100kΩ±5%, ¼W
					P800 - CAPACITORS
C801	1	1	1	DK18103510	Ceramic, 0.01μF +100%, -0%, 500V
C802	1	1	1	ED47705020	Electrolytic, 470μF, 50V
C803	1	1	1	ED47705020	Electrolytic, 470μF, 50V
C804	1	1	1	EA22702590	Electrolytic, 220μF, 25V
C805	1	1	1	DK18103510	Ceramic, 0.01μF +100%, -0%, 500V
C806	1			DF17473600	Film, 0.047μF, 125V
C806		1		DF17473590	Film, 0.047μF, 450V
C806			1	DO07473540	Oil Paper, 0.047μF, 450V
					P800 - MISCELLANEOUS
Q801	1	1	1	HD20002290	Diode, S2VC20R
Q802	1	1	1	HD20001290	Diode, S2VC20
Q803	1	1	1	HT403311D0	Transistor, 2SD331D
Q804	1	1	1	HD30030090	Diode, WZ-177
P808	4	4	6	2933118020	Spacer
J801	1	1		YP10001200	Plug
J802	1	1	1	YP10001200	Plug
J803	1	1	1	YP10001200	Plug
J804	1	1	1	YP10001200	Plug
J805	1	1	1	YP10001200	Plug
J806	1	1	1	YP10001140	Plug
J807	1	1	1	YP10001140	Plug
J808			1	YP10001200	Plug
J809			1	YP10001200	Plug
J810			1	YP10001200	Plug
J811	1	1	1	YP10001200	Plug
J812			1	YP10001200	Plug
J813	1	1	1	YP10001140	Plug
J814	1	1	1	YP10001200	Plug
J815	1	1	1	YP10001200	Plug
J817			1	YP10001200	Plug
J818			1	YJ08000200	Socket, Fuse
J819			1	YJ08000200	Socket, Fuse
F001			1	FS10050800	Fuse, 500mAT
					CONNECTOR CIRCUIT BOARD - PV00
PV00	1	1	1	YD22240020	P.W. Board (Print Only)
	1	1	1	ZZ22240020	P.W. Board Assembly

REF. DESIG.	Q'TY U	C	N	PART NO.	DESCRIPTION
					PV00 - PLUGS
JV01 ~ JV10	10	10	10	YP10001200	Plug
					GENERAL MISCELLANEOUS
W001	1	1		YC02400220	AC Cord
W001			1	YC01900030	AC Cord
L001	1	1		TS14813080	Power Transformer
L001			1	TS14813070	Power Transformer
M001	1	1	1	PM23300030	Phono Motor
M002	1	1	1	IN21200040	Lamp, Neon
R001	1	1	1	RK05020130	Resistor, Variable, 5kΩ (B)
R002	1	1	1	RK05020130	Resistor, Variable, 5kΩ (B)
R003	1	1	1	RC10123120	Resistor, Fixed, 12kΩ ±10%, ½W
S001	1	1		SM01020080	Switch
S001			1	SM01020090	Switch
S002	1	1	1	SM01020140	Switch, Speed
N003	1	1	1	2939164010	Screw Driver
J001			1	BY03110010	Terminal, Voltage Conversion
J002			1	YL09030010	Terminal, AC Cord
W002	1	1	1	YB01200030	Connective Cord
					TONE ARM AND ASSOCIATED PARTS
N001	1	1	1	PA12213010	Tone Arm Assembly
A001	1	1	1	YS02040040	Head Shell
A002	1	1	1	2224112210	Shaft
A003	2	2	2	2224104210	Retainer
A004	2	2	2	2224104220	Retainer
A005	1	1	1	2224104230	Retainer
A006	1	1	1	2224008210	Weight, Main K
A007	1	1	1	2224160210	Bracket K
A008	1	1	1	2224104240	Retainer K
A009	1	1	1	2224002210	Arm
A010	1	1	1	2224104250	Retainer
A011	1	1	1	2224002220	Arm
A012	1	1	1	2224160220	Bracket
A013	1	1	1	2224160230	Bracket
A014	2	2	2	51650308D9	Screw, 3x8
A015	1	1	1	54040202A0	Spring Washer
A016	1	1	1	51060206A0	Screw, 2x6
A017	1	1	1	51650325D9	Screw, 3x2.5
A018	2	2	2	54040302A0	Spring Washer
A019	2	2	2	51060306A9	Screw, 3x6
A020	1	1	1	2224203210	Name Plate
A021	1	1	1	2224154210	Knob
A022	1	1	1	2224354210	Lever
A023	1	1	1	2224109210	Shield
A024	1	1	1	51100204A0	Screw, 2x4
A025	1	1	1	2224115210	Spring

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